CLIPPEDIMAGE= JP02001110828A

PAT-NO: JP02001110828A

DOCUMENT-IDENTIFIER: JP 2001110828 A

TITLE: MANUFACTURING METHOD OF SEMICONDUCTOR DEVICE

PUBN-DATE: April 20, 2001

INVENTOR-INFORMATION:

NAME
SHINOKI, HIROYUKI
TOKUSHIGE, TOSHIMICHI
TAKAI, NOBUYUKI
COUNTRY
N/A
N/A

ASSIGNEE-INFORMATION:

NAME
SANYO ELECTRIC CO LTD

COUNTRY
N/A

APPL-NO: JP11291472

APPL-DATE: October 13, 1999

INT-CL (IPC): H01L021/56; H01L021/301; H01L023/12

ABSTRACT:

PROBLEM TO BE SOLVED: To improve the reliability of a chip size package.

SOLUTION: Metal posts 8 are formed to a wafer, and while a tape 21 for dicing

is stuck to the back face of the wafer, the wafer is diced for each chip.

Then, the upper face of the wafer is resin-sealed, and a resin layer R is

polished, and the head parts of the metal posts 8 are exposed. Then, solder

balls are mounted on the metal posts 8, and the wafer is separated into each

chip by a dicing process.

COPYRIGHT: (C) 2001, JPO

PATENT ABSTRACTS OF JAPAN

(11)Publication number:

05-055278

(43) Date of publication of application: 05.03.1993

(51)Int.CI.

H01L 21/56 H01L 21/304 H01L 21/78 H01L 21/321 H01L 23/12 H01L 23/28

(21)Application number: 03-211207

(71)Applicant:

SONY CORP

(22) Date of filing:

23.08.1991

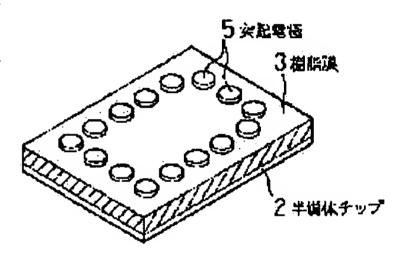
(72)Inventor:

NISHINO TOMONORI

(54) SEMICONDUCTOR DEVICE

(57) Abstract:

PURPOSE: To improve handling operability of a semiconductor chip in a manufacturing step while reducing in thickness of the chip itself irrespective of the size of a semiconductor wafer and to obtain a small-sized thin semiconductor device. CONSTITUTION: A semiconductor wafer 1 is reduced in thickness while forming a resin film 3 in a protective reinforcing plate, protrusion electrodes 5 protrude from the film 3 on a semiconductor chip 2 as an external connection terminal, and the film 3 is so cut as to be the same in size as the chip 2. Thus, a semiconductor device having high reliability, easy handling, small size and thickness, is obtained.



LEGAL STATUS

[Date of request for examination]

19.08.1998

[Date of sending the examiner's decision of rejection]

25.04.2000

[Kind of final disposal of application other than the examiner's decision of rejection or application converted registration]

[Date of final disposal for application]

[Patent number] [Date of registration] 3128878

17.11.2000

[Number of appeal against examiner's decision of rejection]

[Date of requesting appeal against examiner's decision of

rejection]

[Date of extinction of right]

Copyright (C); 1998,2000 Japan Patent Office

| L Number | Hits | Search Text | DB | Time stamp |
|----------|------|--|-----------|-----------------------------------|
| 1 | 1252 | (sog) and chip | USPAT; | 2002/07/24 14:26 |
| | 1202 | (30g, and 5112p | US-PGPUB; | |
| | | | EPO; JPO; | |
| | | | DERWENT; | |
| | | | IBM TDB | |
| 2 | 1040 | ((sog) and chip) and (@ad<20000428) | USPAT; | 2002/07/24 14:32 |
| _ | 1040 | ((bog) and entp) and (cad troops into) | US-PGPUB; | |
| | | | EPO; JPO; | |
| | | | DERWENT; | |
| | | | IBM TDB | |
| 1, | 2477 | alaga noam unfor | USPAT; | 2002/07/24 14:31 |
| 3 | 3477 | glass near wafer | US-PGPUB; | 2002/01/24 14.31 |
| ļ | | | EPO; JPO; | |
| 1 | | | DERWENT; | } |
| | | | IBM TDB | |
| | | alana wasan wafat? and ahin | <u> </u> | 2002/07/24 14:31 |
| 4 | 0 | glass near wafeL3 and chip | USPAT; | 2002/07/24 14:31 |
| | | | US-PGPUB; | |
| | | | EPO; JPO; | |
| | | | DERWENT; | |
| | | | IBM_TDB | |
| 5 | 527 | (glass near wafer) and chip | USPAT; | 2002/07/24 14:31 |
| | | | US-PGPUB; | |
| |] | | EPO; JPO; | |
| | | | DERWENT; | |
| | | | IBM_TDB | |
| 6 | 404 | ((glass near wafer) and chip) and | USPAT; | 2002/07/24 14:49 |
| | | (@ad<20000428) | US-PGPUB; | |
| | | | EPO; JPO; | |
| | | | DERWENT; | |
| | | | IBM_TDB | |
| 7 | 7894 | wafer with (encapsulant or resin or | USPAT; | 2002/07/24 14:49 |
| | | protective) | US-PGPUB; | |
| | | | EPO; JPO; | |
| | | | DERWENT; | |
| | | | IBM_TDB | |
| 8 | 2170 | (wafer with (encapsulant or resin or | USPAT; | 2002/07/24 14:49 |
| | | protective)) and chip | US-PGPUB; | |
| | | | EPO; JPO; | |
| | | | DERWENT; | |
| | | | IBM TDB | |
| 9 | 1750 | ((wafer with (encapsulant or resin or | USPAT; | 2002/07/24 14:50 |
| | | protective)) and chip) and (@ad<20000428) | US-PGPUB; | |
| | | P20000110, | EPO; JPO; | |
| | | | DERWENT; | |
| | | | IBM TDB | |
| 10 | 1023 | (((wafer with (encapsulant or resin or | USPAT; | 2002/07/24 15:02 |
| | 1020 | protective)) and chip) and (@ad<20000428)) | US-PGPUB; | |
| | | and (chip with wafer) | EPO; JPO; | |
| | | | DERWENT; | |
| | | | IBM TDB | |
| 11 | 0 | 20010039078.URPN. | USPĀT | 2002/07/24 14:58 |
| 12 | | 20010039078.URPN. | USPAT | 2002/07/24 14:58 |
| 13 | | 6407333.URPN. | USPAT | 2002/07/24 15:00 |
| 14 | 0 | 6407333.URPN. | USPAT | 2002/07/24 15:00 |
| 15 | 1 | ("6291884").PN. | USPAT | 2002/07/24 15:15 |
| 16 | | 6291884.URPN. | USPAT | 2002/07/24 15:05 |
| 17 | 0 | 6291884.URPN. | USPAT | 2002/07/24 15:05 |
| 18 | 13 | | USPAT | 2002/07/24 15:05 |
| 10 | | "5258330" "5398863" "5641995" | | |
| | | "5672545" "5969417" "5973403" | | |
| | | "5990563" "6111322" "6121686" | | |
| | 1 | | | |
| | _ | "6163462").PN. | USPAT | 2002/07/24 15:18 |
| 19 | 1 | ("6344401").PN. | | 2002/07/24 15:17 |
| 20 | 0 | | USPAT | 1 |
| 21 | 0 | | USPAT | 2002/07/24 15:18 |
| 22 | 1 | ("6291884").PN. | USPAT | 2002/07/24 15:18 |
| 23 | 0 | 6162703.URPN. 6162703.URPN. | USPAT | 2002/07/24 15:22 2002/07/24 15:22 |
| 24 | | | COLUMN | |

| 25 | 12 | ("3677875" "4722130" "4946716" | USPAT | 2002/07/24 15:22 |
|----|----|--|-------|------------------|
| | | "5071792" "5185292" "5223734" | | |
| | | "5234535" "5476566" "5480842" | | |
| | | "5494549" "5824595" "5888883").PN. | | |
| 27 | 12 | 5989982.URPN. | USPAT | 2002/07/24 15:29 |
| 28 | 0 | 2001308116.URPN. | USPAT | 2002/07/24 16:34 |

Search History 7/24/02 5:08:32 PM Page 2